Clinical Laboratory Practices for the Identification of Shiga toxin-producing *Escherichia coli* in FoodNet Sites

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Background Shiga toxin-producing *Escherichia coli* (STEC) strains cause diarrheal illness and are associated with serious disease and disability, such as hemolytic uremic syndrome. The most common STEC, *E. coli* O157:H7, has been recognized as a foodborne pathogen since 1982. More recently, non-O157 STEC have been recognized as an important cause of diarrheal illness. Changes in clinical laboratory practices and new testing methodologies could influence trends in laboratory-based surveillance for STEC.

Methods In 2003 microbiologists in the clinical laboratories in nine FoodNet sites (CA, CO, CT, GA, MD, NY, OR, NY, TN) were surveyed about their laboratory practices for identification of STEC. The survey addressed practices related to culture- and non-culture-based methods.

Results Responses were received from 496 (95%) of 524 laboratories surveyed. Preliminary analysis show that among the 445 (90%) laboratories that reported testing stool specimens for O157/STEC, 324 (73%) tested on-site. Of the 307 (95%) laboratories reporting testing on-site using culture methods, 213 (69%) tested routinely for *E. coli* O157 and 242 (79%) send isolates to the state public health laboratory (PHL) or reference lab for further testing or confirmation. Of the 28 (9%) laboratories using non-culture methods, 6 (21%) reported doing so routinely; 17 (61%) use an EIA (enzyme immunoassay) method. Twenty-two (79%) send either a Shiga toxin-positive isolate or broth to the state PHL for confirmation and serotyping. Regional differences were noted in the number of specimens tested on-site, determinants of testing and methodologies used.

Conclusions Despite the public health importance of non-O157 STEC, utilization of testing methods for its identification remains low. Serotyping of STEC isolates is vital in determining the burden of disease caused by non-O157 STEC as well as detecting and investigating possible outbreaks. Clinical laboratories should be encouraged to test stool specimens for non-O157 STEC and all positive isolates should be serotyped, whether on-site or at the state PHL. Further studies are needed to determine if STEC surveillance has been impacted as laboratories adopt new measures in STEC testing.